

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/733,183

DATE: 03/12/2001

TIME: 14:33:19

Input Set : A:\09733183.txt

Output Set: N:\CRF3\03122001\I733183.raw

66 &lt;211&gt; ORGANISM: Viral

68 &lt;400&gt; SEQUENCE: 2

```

69 Ser Met Ser Tyr Thr Trp Thr Gly Ala Leu Val Thr Pro Cys Ala Ala
70      1      5      10      15
71 Glu Glu Gln Lys Leu Pro Ile Asn Ala Leu Ser Asn Ser Leu Leu Arg
72      20      25      30
73 His His Asn Leu Val Tyr Ser Thr Thr Ser Arg Ser Ala Cys Gln Arg
74      35      40      45
75 Gln Lys Lys Val Thr Phe Asp Arg Leu Gln Val Leu Asp Ser His Tyr
76      50      55      60
77 Gln Asp Val Leu Lys Glu Val Lys Ala Ala Ala Ser Lys Val Lys Ala
78      65      70      75      80
79 Asn Leu Leu Ser Val Glu Glu Ala Cys Ser Leu Thr Pro Pro His Ser
80      85      90      95
81 Ala Lys Ser Lys Phe Gly Tyr Gly Ala Lys Asp Val Arg Cys His Ala
82      100     105     110
83 Arg Lys Ala Val Ala His Ile Asn Ser Val Trp Lys Asp Leu Leu Glu
84      115     120     125
85 Asp Ser Val Thr Pro Ile Asp Thr Thr Ile Met Ala Lys Asn Glu Val
86      130     135     140
87 Phe Cys Val Gln Pro Glu Lys Gly Gly Arg Lys Pro Ala Arg Leu Ile
88      145     150     155     160
89 Val Phe Pro Asp Leu Gly Val Arg Val Cys Glu Lys Met Ala Leu Tyr
90      165     170     175
91 Asp Val Val Ser Lys Leu Pro Leu Ala Val Met Gly Ser Ser Tyr Gly
92      180     185     190
93 Phe Gln Tyr Ser Pro Gly Gln Arg Val Glu Phe Leu Val Gln Ala Trp
94      195     200     205
95 Lys Ser Lys Lys Thr Pro Met Gly Phe Ser Tyr Asp Thr Arg Cys Phe
96      210     215     220
97 Asp Ser Thr Val Thr Glu Ser Asp Ile Arg Thr Glu Glu Ala Ile Tyr
98      225     230     235     240
99 Gln Cys Cys Asp Leu Asp Pro Gln Ala Arg Val Ala Ile Lys Ser Leu
100     245     250     255
101 Thr Glu Arg Leu Tyr Val Gly Gly Pro Leu Thr Asn Ser Arg Gly Glu
102     260     265     270
103 Asn Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser
104     275     280     285
105 Cys Gly Asn Thr Leu Thr Cys Tyr Ile Lys Ala Arg Ala Ala Cys Arg
106     290     295     300
107 Ala Ala Gly Leu Gln Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu
108     305     310     315     320
109 Val Val Ile Cys Glu Ser Ala Gly Val Gln Glu Asp Ala Ala Ser Leu
110     325     330     335
111 Arg Ala Phe Thr Glu Ala Met Thr Arg Tyr Ser Ala Pro Pro Gly Asp
112     340     345     350
113 Pro Pro Gln Pro Glu Tyr Asp Leu Glu Leu Ile Thr Ser Cys Ser Ser
114     355     360     365
115 Asn Val Ser Val Ala His Asp Gly Ala Gly Lys Arg Val Tyr Tyr Leu

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```

116      171      175      180
117 Thr Arg Asp Pro Thr Thr Pro Leu Ala Arg Ala Ala Trp Glu Thr Ala
118 195      190      195      400
119 Arg His Thr Pro Val Asn Ser Trp Leu Gly Asn Ile Ile Met Phe Ala
120      405      410      415
121 Pro Thr Leu Trp Ala Arg Met Ile Leu Met Thr His Phe Phe Ser Val
122      420      425      430
123 Leu Ile Ala Arg Asp Gln Leu Gln Gln Ala Leu Asn Cys Glu Ile Tyr
124      435      440      445
125 Gly Ala Cys Tyr Ser Ile Glu Pro Leu Asp Leu Pro Pro Ile Ile Gln
126      450      455      460
127 Arg Leu His Gly Leu Ser Ala Phe Ser Leu His Ser Tyr Ser Pro Gly
128      465      470      475      480
129 Glu Ile Asn Arg Val Ala Ala Cys Leu Arg Lys Leu Gly Val Pro Pro
130      485      490      495
131 Leu Arg Ala Trp Arg His Arg Ala Arg Ser Val Arg Ala Arg Leu Leu
132      500      505      510
133 Ser Arg Gly Gly Arg Ala Ala Ile Cys Gly Lys Tyr Leu Phe Asn Trp
134      515      520      525
135 Ala Val Arg Thr Lys Leu Lys Leu Thr Pro Ile Pro Ala Ala Gly Arg
136      530      535      540
137 Leu Asp Leu Ser Gly Trp Phe Thr Ala Gly Tyr Ser Gly Gly Asp Ile
138      545      550      555      560
139 Tyr His Ser Val Ser His Ala Arg Pro Arg Trp Phe Trp Phe Cys Leu
140      565      570      575
141 Leu Leu Leu Ala Ala Gly Val Gly Ile Tyr Leu Leu Pro Asn Arg
142      580      585      590

```

144 &lt;210&gt; SEQ ID NO: 3

145 &lt;211&gt; LENGTH: 1710

146 &lt;212&gt; TYPE: DNA

147 &lt;213&gt; ORGANISM: Viral

148 &lt;401&gt; SEQUENCE: 3

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150 tcaatgtott attcctggac aggcgcactc gtcaccccggt gcggtgcgga agaacaaaaa      60
151 tggcccatra acgcactgag caactcgttg ctaagccatc acaatctggt gtattccacc      120
152 acttcacgta gtgtttgcra aaggcagaag aaagtcacat ttgacagact gcaagttctg      180
153 gacagccatt accaggacgt gctcaaggag gtcaaagcag cggcggtcaaa agtgaaggct      240
154 aacttgcatat ccgttagagga agcttgcagc ctgacgcccc cacattcagc caaatccaag      300
155 ttgggtatag gggcaaaaga cgtccgttgc catgccagaa aggcctgtag ccacatcaac      360
156 tccgtgtgga aagaacctct ggaagacagt gtaacaccaa tagacactac catcatggcc      420
157 aagaacgagg tttctcgtc tcagcctgag aaggggggtc gtaagccagc tcgtctcacc      480
158 gtgttccccc accctggggt gcgcgtgtgc gagaagatgg cctgtacga cgtggttagc      540
159 aagctccccc tggcctgtat ggaagctcc tacggattcc aatactcacc aggacagcgg      600
160 gttgaattcc tcttgcaagc gtggaagtcc aagaagaccc cgtatggggt ctcgtatgat      660
161 acccgctggt ttgaactcac agtcactgag agcgacatcc gtacggagga ggaattttac      720
162 caatgttgtg acctggatcc ccaagccccc gttagccatca agtccctcac tgagaggctt      780
163 tatgttgggg gccctctaac caattcaagg ggggaaaact ggggtaccc caggtgccgc      840
164 gcagcggcgg tacttaccac tagctgtcgt aacacctca cttgtacat caaggcccgg      900
165 gcagcctgtc gacccgcagg gctccaggac tgcaccatgc tctgtgtggy cgaagactta      960
166 gtctttatct gtgaaagtgc gggggtccag gaggacggcg cgaagcctgag agccttcacg      1020

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```

167 gaggtataga gaggtaacac gggggggggc ggggaggggg gacaaaccaga atacgacttg 1080
168 gaggtataaa gactatgctc ctcccaagtg ttagtggccc acgaaggcgc tggaaagagg 1140
169 gtatataaac ttacacggtg acctacaacc cccctggcga gaggcgggtg ggagacagca 1200
170 agatcacctc cagtcacatc ctggctaggg aacataatca tgtttgcccc cacaatgttg 1260
171 ttagggatga taaggatgac ccattctctt agcgtctcca tagccaggga tcagcttgaa 1320
172 ttaggtctta atgggagat ctatggagcc tgcactcca tagaaccact ggatctacct 1380
173 ctatctcttc aaagattcca tggcctcaga gcattttcac tccacagtta ctctccaggt 1440
174 gaaatcaata tcttggcggc argcttcaga aaacttgggg tcccgccctt gcgagcttgg 1500
175 aaacacggg tctggaggtt ccgctctagg ctctctctca gaggaggcag gcttgccata 1560
176 tcttgcaggt acctcttcaa ctgggcagta ayaacaaagc tcaaaactac tccaatagcg 1620
177 ggcgttggcc ggttggactt gtcgggttgg ttcagggtg gctacagcgg gggagacatt 1680
178 tctcacagcg tctctcatgc ccggcccccgc 1740
181 <211> SEQ ID NO: 4
182 <211> LENGTH: 590
183 <212> TYPE: PRT
184 <213> ORGANISM: Viral
186 <400> SEQUENCE: 4
187 Ser Met Ser Tyr Ser Trp Thr Gly Ala Leu Val Thr Pro Cys Ala Ala
188 1 5 10 15
189 Gln Gln Gln Lys Leu Pro Ile Asn Ala Leu Ser Asn Ser Leu Leu Arg
190 20 25 30
191 His His Asn Leu Val Tyr Ser Thr Thr Ser Arg Ser Ala Cys Gln Arg
192 35 40 45
193 Gln Lys Leu Arg His His Asn Leu Val Tyr Ser Thr Thr Ser Arg Ser
194 50 55 60
195 Ala Cys Gln Arg Gln Lys Lys Val Thr Phe Asp Arg Leu Gln Val Leu
196 65 70 75 80
197 Asp Ser His Tyr Gln Asp Val Leu Lys Glu Val Lys Ala Ala Ala Ser
198 85 90 95
199 Lys Val Lys Ala Asn Leu Leu Ser Val Gln Gln Ala Cys Ser Leu Thr
200 100 105 110
201 Pro Pro His Ser Ala Lys Ser Lys Phe Gly Tyr Gly Ala Lys Asp Val
202 115 120 125
203 Arg Cys His Ala Arg Lys Ala Val Ala His Ile Asn Ser Val Trp Lys
204 130 135 140
205 Asp Leu Leu Gln Asp Ser Val Thr Pro Ile Asp Thr Thr Ile Met Ala
206 145 150 155 160
207 Lys Asn Glu Val Phe Cys Val Gln Pro Glu Lys Gly Gly Arg Lys Pro
208 165 170 175
209 Ala Arg Leu Ile Val Phe Pro Asp Leu Gly Val Arg Val Cys Glu Lys
210 180 185 190
211 Met Ala Leu Tyr Asp Val Val Ser Lys Leu Pro Leu Ala Val Met Gly
212 195 200 205
213 Ser Ser Tyr Gly Phe Gln Tyr Ser Pro Gly Gln Arg Val Glu Phe Leu
214 210 215 220
215 Val Gln Ala Trp Lys Ser Lys Lys Thr Pro Met Gly Phe Ser Tyr Asp
216 225 230 235 240
217 Thr Arg Cys Phe Asp Ser Thr Val Thr Glu Ser Asp Ile Arg Thr Glu
218 245 250 255

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```

117  Ala Ala Ile Tyr Glu Cys Cys Asp Leu Asp Pro Gln Ala Arg Val Ala
118      180      365      170
119  Ile Lys Ser Leu Thr Ala Arg Leu Tyr Val Gly Gly Pro Leu Thr Asn
120      175      260      185
121  Ser Arg Gly Glu Asn Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val
122      191      195      300
123  Leu Thr Thr Ser Cys Gly Asn Thr Leu Thr Cys Tyr Ile Lys Ala Arg
124      305      310      315      320
125  Ala Ala Cys Arg Ala Ala Gly Leu Gln Asp Cys Thr Met Leu Val Cys
126      325      330      335
127  Gly Asp Asp Leu Val Val Ile Cys Glu Ser Ala Gly Val Gln Glu Asp
128      340      345      350
129  Ala Ala Ser Leu Arg Ala Phe Thr Glu Ala Met Thr Arg Tyr Ser Ala
130      355      360      365
131  Pro Pro Gly Asp Pro Pro Gln Pro Glu Tyr Asp Leu Glu Leu Ile Thr
132      370      375      380
133  Ser Cys Ser Ser Asn Val Ser Val Ala His Asp Gly Ala Gly Lys Arg
134      385      390      395      400
135  Val Tyr Tyr Leu Thr Arg Asp Pro Thr Thr Pro Leu Ala Arg Ala Ala
136      405      410      415
137  Trp Glu Thr Ala Arg His Thr Pro Val Asn Ser Trp Leu Gly Asn Ile
138      420      425      430
139  Ile Met Phe Ala Pro Thr Leu Trp Ala Arg Met Ile Leu Met Thr His
140      435      440      445
141  Phe Phe Ser Val Leu Ile Ala Arg Asp Gln Leu Glu Gln Ala Leu Asn
142      450      455      460
143  Cys Glu Ile Tyr Gly Ala Cys Tyr Ser Ile Glu Pro Leu Asp Leu Pro
144      465      470      475      480
145  Pro Ile Ile Glu Arg Leu His Gly Leu Ser Ala Phe Ser Leu His Ser
146      485      490      495
147  Tyr Ser Pro Gly Glu Ile Asn Arg Val Ala Ala Cys Leu Arg Lys Leu
148      500      505      510
149  Gly Val Pro Pro Leu Arg Ala Trp Arg His Arg Ala Arg Ser Val Arg
150      515      520      525
151  Ala Arg Leu Leu Ser Arg Gly Gly Arg Ala Ala Ile Cys Gly Lys Tyr
152      530      535      540
153  Leu Phe Asn Trp Ala Val Arg Thr Lys Leu Lys Leu Thr Pro Ile Ala
154      545      550      555      560
155  Ala Ala Gly Arg Leu Asp Leu Ser Gly Trp Phe Thr Ala Gly Tyr Ser
156      565      570      575
157  Gly Gly Asp Ile Tyr His Ser Val Ser His Ala Arg Pro Arg
158      580      585      590
159  <210> SEQ ID NO: 3
160  <311> LENGTH: 19
161  <312> TYPE: PRT
162  <313> ORGANISM: Viral
163  <400> SEQUENCE: 5
164  Arg Leu Leu Asp Leu Ser Ser Trp Phe Thr Val Ser Ala Gly Gly Gly
165  1 10 15

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